

Appl. No. 09/528,254
Amendment dated September 10, 2004
Reply to Office Action mailed May 10, 2004

REMARKS

Reconsideration is respectfully requested.

Claims 1 through 7, 9 through 11, 19 through 20, 23 through 24, 29 through 30, and 32 through 47 remain in this application. Claims 8, 12 through 18, 21, 22, 25 through 28 and 31 have been cancelled without prejudice. No claims have been withdrawn. No claims have been added in this amendment.

The Examiner's rejections will be considered in the order of their occurrence in the Office Action.

As a preliminary matter, the listing of claims rejected under §102(e) in the Office Action includes claims "19 through 47", but the §103(e) rejection of claims 30 and 32 through 34 clearly admits that "[Pertrushin] does not show [user exerted force] as the user inputs text", and thus the rejection of those claims is based upon the allegedly obvious combination of the Pertrushin and Shahonian patents (which is discussed in greater detail below), and therefore it is submitted that claims 30 and 32 through 34 should not be included in the §102(e) rejection based upon Pertrushin alone.

Further, the §103(e) rejection of claims 35 through 40 clearly admits that "the specific speech analysis qualities are not mentioned per se in Pertrushin", and thus the rejection of those claims is based upon the allegedly obvious combination of the Pertrushin and Fasciano patents (which is also discussed in greater detail below), and therefore it is submitted that claims 35 through 40 should not be included in the §102(e) rejection based upon Pertrushin alone.

Also, the Office Action states that "[c]laims 41 through 47 show the same features as claims 1 through 7 and are rejected for the same reasons", but claims 41 through 43 depend from claim 39, which was not rejected on

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the basis of the Pertrushin patent alone (as a part of the §102(e) rejection), so a rejection of claims 41 through 43 would at least have to be based upon a combination of the Pertrushin and Fasciano patents (upon which claim 39 is rejected), and therefore claims 41 through 43 will be discussed as such.

Therefore, it is presumed that the §102(e) rejection only applies to claims 1 through 7, 9 through 11, 19, 20, 23, 24, 29 and 44 through 47. Further, the §103(a) rejection based upon the Pertrushin and Fasciano patents is deemed to include not only claims 35 through 40, but also claims 41 through 43.

Part 1 of the Office Action

Claims 1 through 7, 9 through 11 and 19 through 47 have been rejected under 35 U.S.C. §102(e) as being anticipated by Pertrushin (6275806). The rejection is respectfully traversed.

Claim 1, particularly as amended, requires "means for changing the output of the application program responsive to the apparent affective state of the user"

The Pertrushin patent is relied upon in the rejection of claim 1 of the application, and in particular, the Office Action makes reference to two sections of the Pertrushin patent as teaching the above-noted requirement of claim 1. The first cited section of Pertrushin¹, at col. 47, lines 50 through 62, fails to identify any change in the output of an application program, and

¹ Pertrushin at col. 47, lines 50 through 62, states:

In another embodiment of the present invention described in FIG. 28, emotion is detected in the voice signals of the person. Here, the predetermined criteria could include emotion-based criteria designed to help detect smuggling and other illegal activities as well as help catch persons with forged documents. For example, fear and anxiety could be detected in the voice of a person as he or she is answering questions asked by a customs officer, for example. Another of the emotions that could be detected is a level of nervousness of the person. See the previous sections about detecting emotion in voice signals for more detail on how such an embodiment works.

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thus would not lead one of ordinary skill in the art to understand that the Pertrushin patent includes any "means for *changing* the output of the application program *responsive to* the apparent affective state of the user", as is required by claim 1 (emphasis added). Further, the other cited section of the Pertrushin patent² (at col. 43, lines 15 through 40) that is relied upon in the rejection in the Office Action, could only leave one of ordinary skill in the art to wonder what part of the output of the Pertrushin system is "changed" in response to the "apparent affective state" of the user.

It is therefore submitted that the Pertrushin patent would not lead one of ordinary skill in the art to the applicant's claimed invention as defined in claim 1, especially with the requirements set forth above, and therefore it is submitted that claim 1 is allowable over the prior art

Claim 2, particularly as amended, requires "said means for determining the apparent affective state of the user comprises a means responsive to the facial expressions of the user". The Pertrushin patent fails to teach anything that is responsive to facial features, and therefore it is submitted that claim 2 defines over the Pertrushin patent.

² Pertrushin at col. 43, lines 15 through 40 states:

Allowing the voice scan to include more than one phrase also allows identity verification by comparing alternate phrases, such as by prompting the user to speak an additional phrase if the identity of the user is not verified with a first phrase. For example, if the user's voice sample almost matches the voice scan, but the discrepancies between the two are above a predetermined threshold, the user can be requested to speak another phrase, which would also be used to verify the identity of the user. This would allow a user more than one opportunity to attempt to access the data, and could be particularly useful for a user who has an illness, such as a cold, that slightly alters the user's voice. Optionally, the voice sample of the user and/or a time and date the voice sample was received from the user may be recorded.

With reference to operation 2106 of FIG. 21, an exemplary embodiment of the present invention is of a system and method for establishing a positive or negative identity of a speaker which employ at least two different voice authentication devices and which can be used for supervising a controlled access into a secured-system. Specifically, the present invention can be used to provide voice authentication characterized by exceptionally low false-acceptance and low false-rejection rates.

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Claim 4 requires "wherein said means for determining the apparent affective state of the user comprises a means responsive to content of said user input", and it is submitted that "vocal temporal features" of the Pertrushin patent do not anticipate this requirement, and therefore claim 4 is allowable over the Pertrushin patent.

Claims 6 requires "wherein said means for changing the operation of the application program comprises means for changing the appearance of text input by the user if the apparent affective state of the user indicates that the text output by the application program should be marked", and claim 19 requires in part "wherein said means for changing the operation of the application program comprises means for changing the appearance of text input by the user if the apparent affective state of the user indicates that the text input by the user should be marked".

With respect to claim 6, it is alleged in the Office Action that "text is marked based on the affective state (column 46 lines 39-55, note the display of information". However, nothing in the Pertrushin text³ at col. 46, lines 39 through 55 mentions "the display of information", and clearly nothing teaches or suggests "changing the appearance of text input by the user if the apparent affective state of the user indicates that the text output by the application program should be marked". The Office Action further alleges

³ Col. 46, lines 39 through 55 of Pertrushin states:

Audio pitch 2536 is received both by speaker 2420 and by the specific secured-system 2422 (e.g., according to the system access code used by speaker 2420).

FIG. 26 describes what follows. Security-center 2424, or preferably secured-system 2422, performs voice authentication of the incoming voice using a second voice authentication algorithm 2638, which is different from voice authentication algorithm 2530 used by security-center 2424, as described above with respect to FIG. 25.

For example, voice authentication algorithm 2638 may be a neural network voice authentication algorithm, as, for example, described in U.S. Pat. No. 5,461,697.

Again, the false rejection threshold is set to a low level, say below 0.5%, preferably 0.3 or 0.1%. Following the above rational and calculations, as a result, for algorithms having EER value of about 2%, the false acceptance level (e.g., for 0.3%) falls in the order of 4.6%.

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"the user password is displayed user text column 47 lines 3-22". Again, nothing in the Pertrushin patent text⁴ at col. 47, lines 3 through 22 mentions a user password, and more importantly, nothing suggests that the appearance of text is changed based upon a user's apparent affective state. It is therefore submitted that the Pertrushin patent does not anticipate the requirements of claim 6 and claim 19, and these claims are allowable over the Pertrushin patent.

Claim 9 requires, in part, "marking the appearance of at least a portion of the text accepted from the writer if the apparent emotional state of the writer indicates that the text should be marked". The Pertrushin patent fails to teach the marking the appearance of text based upon the apparent emotional state of the writer.

It is therefore submitted that the Pertrushin teaching would not lead one of ordinary skill in the art to the applicant's claimed invention as defined in claim 1, especially with the requirements set forth above, and therefore it is submitted that claim 1 is allowable over the prior art.

Further, claims 2 through 7 and 39 through 47, which depend from claim 1,

⁴ Pertrushin at col. 47, lines 3 through 22 states:

Thus, only if both security-center 2424 and secured-system 2422 have established positive voice verification, the speaker has been positively identified and the process has been positively completed and access to secured-system 2422 is, therefore, allowed, as indicated by 2744.

If one of the systems 2422 and 2424 fails to verify the speaker's voice, the process has not been positively completed and access to secured-system 2422 is, therefore, denied.

Voice Based System for Regulating Border Crossing

FIG. 28 depicts a method for determining eligibility of a person at a border crossing to cross the border based on voice signals. First, in operation 2800, voice signals are received from a person attempting to cross a border. The voice signals of the person are analyzed in operation 2802 to determine whether the person meets predetermined criteria to cross the border. Then, in operation 2804, an indication is output as to whether the person meets the predetermined criteria to cross the border. A more detailed description of processes and apparatuses to perform these operations is found below.

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also include the requirements discussed above and therefore are also submitted to be in condition for allowance.

Withdrawal of the §102(e) rejection of claims 1 through 7, 9 through 11 and 19 through 47 is therefore respectfully requested.

Part 2 of the Office Action

Claims 30 and 32 through 34 have been rejected under 35 U.S.C. Section 103(a) as being unpatentable over Pertrushin (6275806) and Shahoian et al (6717573) (hereinafter "Shahoian"). The rejection is respectfully traversed.

Claim 30 requires "wherein the means for monitoring characteristics of the user includes means for monitoring *a degree of force exerted by the user* on a manual input device as the user inputs text", while claim 32 (now independent) requires "wherein the means for determining the apparent affective state of the user comprises a manual input device capable of measuring *a degree of force applied by the user* to the manual input device", claim 33 requires "wherein the manual input device comprises a keyboard capable of measuring *a degree of force applied by the user* to a key on the keyboard", and claim 34 requires "wherein the manual input device comprises a computer mouse capable of measuring *a degree of force applied by the user* to a button on the mouse" (all emphasis added).

It is conceded in the Office Action that the Pertrushin patent "does not show [the user exerted force] as the user inputs text". It is then alleged in the Office Action that the Shahoian patent suggests "do[ing] this for added user flexibility in interfacing with the system", and also that "it would have been obvious to a person with ordinary skill in the art to do this in Pertrushin, because it would add flexibility in interfacing with the system".

However, looking closely at the Shahoian patent, and in particular to the portion of the Shahoian patent that is specifically relied upon in the

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rejection of the Office Action, leads one of ordinary skill in the art to understand that the Shahoian patent, rather than employing any measurement or monitoring of a degree of force *applied by a user to an input device*, instead teaches a system for providing "haptic" feedback *to the user of a computer mouse*. Specifically, at col. 1, lines 34 through 45, Shahoian defines haptic feedback (emphasis added):

In some interface devices, force feedback or tactile feedback is also provided to the user, also known more generally herein as "haptic feedback." These types of interface devices can provide physical sensations which are felt by the user using the controller or manipulating the physical object of the interface device. One or more motors or other actuators are used in the device and are connected to the controlling computer system. The computer system controls forces on the haptic feedback device in conjunction and coordinated with displayed events and interactions on the host by sending control signals or commands to the haptic feedback device and the actuators.

Thus, haptic feedback is applied *to the user*, and is not something that the user *applies to the device*.

In the cited portion of the Shahoian patent at col. 7, lines 15 through 50, it is stated that (emphasis added):

Microprocessor 110 can receive signals from sensor 112 and provide signals to actuator 18 in accordance with instructions provided by host computer 14 over bus 20. For example, in a local control embodiment, host computer 14 provides high level supervisory commands to microprocessor 110 over bus 20, and microprocessor 110 decodes the commands and manages low level force control loops to sensors and the actuator in accordance with the high level commands and independently of the host computer 14. This operation is described in greater detail in U.S. Pat. Nos. 5,739,811 and 5,734,373, both incorporated by reference herein. In the host control loop, force commands are output from the host computer to microprocessor 110 and instruct the microprocessor to output a force or force sensation having specified characteristics. The local microprocessor 110 reports data to the host computer, such as locative data that describes the position of the mouse in one or more provided degrees of freedom. The data can also describe the states of buttons 16 and safety switch 132. The host computer uses the locative data to update executed programs. In the local control loop, actuator signals are provided from the microprocessor 110 to actuator 18 and sensor signals are provided

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from the sensor 112 and other input devices 118 to the microprocessor 110. Herein, the term "tactile sensation" refers to either a single force or a sequence of forces output by the actuator 18 which provide a sensation to the user. For example, vibrations, a single jolt, or a texture sensation are all considered tactile sensations. The microprocessor 110 can process inputted sensor signals to determine appropriate output actuator signals by following stored instructions. The microprocessor may use sensor signals in the local determination of forces to be output on the user object, as well as reporting locative data derived from the sensor signals to the host computer.

It is clear that the sensor 112 of the "force feedback mouse" of the Shahoian patent is not any sensor capable of measuring a degree of force applied by a user to the mouse, as required by the claims of the instant application, but instead is the sensor that detects the movement of the mouse in the x-y plane. This is clear from the "Summary of the Invention" portion of the Shahoian patent, which states at col. 2, lines 14 through 22 (emphasis added):

More specifically, in one aspect of the present invention, a haptic feedback mouse device for providing haptic sensations to a user includes a housing physically contacted by the user and movable in an x-y plane, a sensor coupled to the housing and operative to output a sensor signal indicative of the x-y movement, an actuator, and a mass coupled to the actuator, wherein said eccentric mass can be rotated by the actuator.

And this is further confirmed by the "Detailed Description" portion of the Shahoian patent at col. 8, line 65 through col. 9, line 12, where it is stated (emphasis added):

Sensors 112 sense the position or motion of the mouse device (e.g. the housing 50) in its planar degrees of freedom and provides signals to microprocessor 110 (or host 14) including information representative of the position or motion. Sensors suitable for detecting planar motion of a mouse include digital optical encoders frictionally coupled to a rotating ball or cylinder, as is well known to those skilled in the art. Optical sensor systems, linear optical encoders, potentiometers, optical sensors, velocity sensors, acceleration sensors, strain gauge, or other types of sensors can also be used, and either relative or absolute sensors can be provided. Optional sensor interface 114 can be used to convert sensor signals to signals that can be interpreted by the microprocessor 110 and/or host computer system 14,

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as is well known to those skilled in the art.

It is therefore submitted that, one of ordinary skill in the art, considering the disclosure of the Shahoian patent, would understand that the Shahoian device is directed to providing tactile feedback *to the user*, and is incapable of monitoring or measuring a degree of force applied *by a user* to the device.

It is therefore submitted that the cited patents, and especially the allegedly obvious combination of Pertrushin and Shahoian set forth in the rejection of the Office Action, would not lead one skilled in the art to the applicant's invention as required by claims 30 and 32 through 34.

Withdrawal of the §103(a) rejection of claims 30 and 32 through 34 is therefore respectfully requested.

Part 3 of the Office Action

Claims 35 through 40 have been rejected under 35 U.S.C. Section 103(a) as being unpatentable over Pertrushin (6275806) and Fasciano. The rejection is respectfully traversed.

It is alleged in the Office Action that "Pertrushin does mention flexibility in analyzing user outputs", but the Office Action fails to identify where in the Pertrushin patent this "flexibility" is advocated, and a search of the Pertrushin text does not reveal where Pertrushin suggests this. Further, the Fasciano patent also does not teach "specific speech analysis qualities for *flexibility in analyzing user outputs*". Instead, the Fasciano patent discusses speech recognition for the purpose of synchronizing and otherwise coordinating video with a script of the text being read. See, for example, Fasciano at col. 2, lines 17 through 42:

Audio associated with a video program, such as an audio track or live or recorded commentary, may be analyzed to recognize or detect one or more predetermined sound patterns, such as words or sound effects. The recognized or detected sound patterns may be used to

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enhance video processing, by controlling video capture and/or delivery during editing, or to facilitate selection of clips or splice points during editing.

For example, sound pattern recognition may be used in combination with a script to automatically match video segments with portions of the script that they represent. The script may be presented on a computer user interface to allow an editor to select a portion of the script. Matching video segments, having the same sound patterns for either speech or sound effects, can be presented as options for selection by the editor. These options also may be considered to be equivalent media, although they may not come from the same original source or have the same duration.

Sound pattern recognition also may be used to identify possible splice points in the editing process. For example, an editor may look for a particular spoken word or sound, rather than the mere presence or absence of sound, in a sound track in order to identify an end or beginning of a desired video segment.

It is clear from this portion of the Summary of the Invention section of the Fasciano patent that one of ordinary skill in the art would understand the Fasciano system as being directed to the coordination of video and audio or text, and not to any purpose of detecting emotion in a voice as addressed in Pertrushin. Fasciano fails to disclose any purpose for its speech recognition regarding detecting emotion, or that its speech recognition techniques would be useful for such a purpose.

The Office Action must provide specific, objective evidence of record for a finding of a suggestion or motivation to combine reference teachings and must explain the reasoning by which the evidence is deemed to support such a finding. In re Sang Su Lee, 277 F.3d 1338, 61 USPQ2d 1430 (Fed. Cir. 2002). The Office Action states that the motivation to combine Pertrushin and Fasciano is for providing “flexibility in analyzing user outputs” It is respectfully submitted that given the actual teachings of the references, the cited motivation to combine is not found in the references themselves. The cited references do not state that their purpose or benefit is to provide flexibility in analyzing user outputs and it is respectfully submitted that the quoted statement from the Office Action is merely a

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conclusory statement of belief and not specific objective evidence of a motivation to combine.

It is therefore submitted that the cited patents, and especially the allegedly obvious combination of Pertrushin and Fasciano set forth in the rejection of the Office Action, would not lead one skilled in the art to the applicant's invention as required by claims 35 through 40.

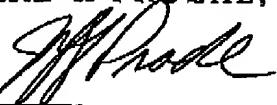
Withdrawal of the §103(a) rejection of claims 35 through 40 is therefore respectfully requested.

CONCLUSION

In light of the foregoing amendments and remarks, early reconsideration and allowance of this application are most courteously solicited.

Respectfully submitted,

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Date: SEPT. 10, 2004